

WHAT IS CLAIMED IS:

1. A mobile body controller driven by a synchronous motor comprising:

5 a rotor position estimator which estimates a magnetic pole position of a rotor of said synchronous motor based on electrical quantities in relation to electric power supplied to said synchronous motor; and

10 a mobile body position estimator which estimates the position of said mobile body based on the magnetic pole position estimated by said rotor position estimator.

15 2. A mobile body controller as claimed in Claim 1, further comprising a motor speed command generator which controls the speed of said synchronous motor based on the position command and the position of said mobile body estimated by said mobile body position estimator.

20 3. A mobile body controller as claimed in Claim 1 or 2, further comprising a mobile body position indicator which displays the position of said mobile body estimated by said mobile body position estimator.

25 4. A mobile body controller as claimed in Claim 1 or 2, further comprising position information correcting means which corrects the position of said mobile body estimated by said mobile body position estimator based on absolute position information of said mobile body.

5. A mobile body controller as claimed in Claim 4, wherein said absolute position information is position information obtained when said mobile body passes by a fixed point installed in the traveling area of said mobile body.

6. A mobile body controller as claimed in Claim 5, wherein correcting operation by said position information correcting means is enabled when said mobile body exists in the vicinity of said fixed point.

7. A mobile body controller as claimed in Claim 1 or 2, wherein the initial value of the position of said mobile body estimated by said mobile body position estimator is set based on the absolute position information of said mobile body.

8. A method of controlling a mobile body driven by a synchronous motor comprising the steps of:

estimating a magnetic pole position of a rotor of said synchronous motor based on electrical quantities in relation to electric power supplied to said synchronous motor, and

estimating the position of said mobile body based on said magnetic pole position estimated in the previous step.

9. A method of controlling a mobile body as claimed in Claim 8, comprising the further step of:

correcting the position of said mobile body estimated by said second step based on absolute position information of

said mobile body.

10. A method of controlling a mobile body as claimed in Claim 8, comprising the further step of:

5 setting the initial value of the position of said mobile body estimated by said first step based on absolute position information of said mobile body.

11. A mobile body system comprising:

10 a mobile body driven by a synchronous motor; and
 a controller which controls the speed of said synchronous motor so that the position of said mobile body approach the position command,

 said controller having

15 a rotor position estimator which estimates a magnetic pole position of a rotor of said synchronous motor based on electrical quantities in relation to electric power supplied to said synchronous motor,

20 a mobile body position estimator which estimates the position of said mobile body based on the magnetic pole position estimated by said rotor position estimator, and

25 a motor speed command generator which controls the speed of said synchronous motor based on the position command and the position of said mobile body estimated by said mobile body position estimator.

12. A mobile body system as claimed in Claim 11, further comprising position information correcting means which

corrects the position of said mobile body estimated by said mobile body position estimator based on absolute position information of said mobile body.

- 5 13. A mobile body system as claimed in Claim 11, wherein the initial value of the position of said mobile body estimated by said mobile body position estimator is set based on the absolute position information of said mobile body.

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